Reg. No. : | | | | | | | | | | |

Question Paper Code: 95P18

M.E.DEGREE EXAMINATION, JAN 2021

Elective

CAD / CAM

19PCD518 – INDUSTRIAL ROBOTICS AND EXPERT SYSTEMS

(Regulation 2019)

Duration: One hour   Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. The following drive is used for lighter class of Robot.   CO1- R

    (a) Pneumatic drive   (b) Hydraulic drive

    (c) Electric drive   (d) All of the above

2. The Robot designed with Cartesian coordinate systems has   CO1- R

    (a) Three linear movements

    (b) Three rotational movements

    (c) Two linear and one rotational movement

    (d) Two rotational and one linear movement

3. Drives are also known as   CO2- R

    (a) Controller   (b) Sensors

    (c) Manipulator   (d) Actuators

4. Industrial Robots are generally designed to carry which of the   CO2- R
    following coordinate system(s).

    (a) Cartesian coordinate systems   (b) Polar coordinate systems

    (c) Cylindrical coordinate system   (d) All of the above

5. If a robot can alter its own trajectory in response to external   CO3- R
    conditions, it is considered to be _____

    (a) Open loop   (b) Mobile   (c) Intelligent   (d) Non-servo

6. _____ is correct for proximity sensors?   CO3- R

   (a) Inductive type   (b) Capacitive type

   (c) Ultrasonic wave type   (d) All of the mentioned

7. What is the name for information sent from robot sensors to robot   CO4- R
   controllers?

   (a) Temperature   (b) Pressure

   (c) Feedback   (d) Signal

8. The number of moveable joints in the base, the arm, and the end   CO4- R
   effectors of the robot determines_____

   (a) degrees of freedom   (b) payload capacity

   (c) operational limits   (d) flexibility

9. _____ terms refers to the use of compressed gasses to drive   CO5- R
   (power) the robot device?

   (a) Piezoelectric   (b) Photosensitive

   (c) Pneumatic   (d) None of the mentioned

10. In ANN, neurons are represented by _____   CO5- R

    (a) Memory   (b) Processing element

    (c) Wires   (d) None of the mentioned

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain various parts of robots with neat sketch.   CO1- U   (8)

12. Describe the robot gripper to take measurements of outer and   CO2- U   (8)
    inner dimensions of objects with the aid of pneumatic gauging

13. What is pattern recognition? Briefly describe a sensing device   CO3- U   (8)
    to generate the contour picture of a work piece.

14. Briefly explain the safety sensors and safety monitoring of   CO4- U   (8)
    robots in detail

15. Explain the various types of motion interpolations   CO5- U   (8)

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